

CLAIMS

What is claimed is :

1. A location services apparatus for providing location services to a mobile station, comprising:
 - a) a CPU;
 - b) a memory coupled to the CPU, wherein the memory stores data pertaining to location services equipment identity information and location services equipment identifiers; and
 - c) an equipment identity processor coupled to the CPU and to the memory, wherein the equipment identity processor is configured to receive location services equipment identifiers and to retrieve location equipment identity information, and wherein the equipment identity processor selectively generates location services control signals that control operation of the CPU responsive to an identified characteristic of the location services equipment identity.
2. The location services apparatus of Claim 1 wherein the location services equipment identity information and the location services equipment identifiers are associated with and correspond to a mobile station.
3. The location services apparatus of Claim 2, further comprising an equipment identity server, wherein the equipment identity server is configured to provide the characteristic of the mobile station to the equipment identity processor.
4. The location services apparatus of Claim 2 wherein the characteristic includes a manufacturer identifier of the mobile station.
5. The location services apparatus of Claim 2 wherein the characteristic includes a model identifier of the mobile station.
6. The location services apparatus of Claim 2 wherein the characteristic includes an error code associated with the mobile station.

7. The location services apparatus of Claim 6 wherein the location services control signals compensate for an error associated with the error code.
8. The location services apparatus of Claim 2 wherein the location services control signals cause the CPU to store information in the memory.
9. A communication system for providing location services to a mobile station, the system comprising:
 - a) a base station system; and
 - b) a location server coupled with the base station system, wherein the location server is configured to selectively generate location services control signals to control operation of the system in response to a characteristic of the mobile station to which location services are to be provided.
10. A method of providing location services to a mobile station, the method comprising the steps of:
 - a) receiving a request for location services to be provided to the mobile station;
 - b) identifying a location services characteristic of the mobile station in response to the request, wherein the location services characteristic comprises one or more of the following characteristics: a manufacturer, a model, a bug, an error code; and
 - c) selectively generating location services control signals based at least in part on the location services characteristic identified in step b).
11. The method of Claim 10, further comprising the step of storing data based at least in part on the location services characteristic of the mobile station.
12. The method of Claim 10 wherein the location services control signals compensate for an error associated with the bug.
13. The method of Claim 10 wherein the location services control signals compensate for an error associated with the error code.
14. A communication system comprising:
 - a) a means for providing location services to a mobile station; and

- b) a means for controlling the means for providing location services based at least in part on an identified location services characteristic of the mobile station.

15. The communication system of Claim 14, further comprising a means for identifying a mobile station to which location services are to be provided.

16. The communication system of Claim 14, further comprising a means for storing data based at least in part on the identified location services characteristic of the mobile station.

17. A method of operating a location server, comprising the steps of:

- a) receiving a request for location services associated with a mobile station;
- b) identifying a mobile station type of the associated mobile station; and
- c) storing at least one parameter based on the identified mobile station type.

18. The method of Claim 17 wherein receiving a request for location services associated with a mobile station includes receiving a mobile station type identifier.

19. The method of Claim 17 wherein receiving a request for location services associated with a mobile station includes receiving a mobile station manufacturer identifier and a mobile station model identifier as part of the request for location services.

20. The method of Claim 17 wherein receiving a request for location services associated with a mobile station includes receiving a mobile station user identifier.

21. The method of Claim 20, wherein the mobile station user identifier may include an international mobile subscriber identity or an electronic serial number.

22. The method of Claim 17 wherein identifying a mobile station type of the associated mobile station includes identifying the associated mobile station by manufacturer and model.

23. The method of Claim 17, further comprising the step of determining a performance parameter related to the request for location services.

24. A method of operating a mobile switching center, comprising the steps of:

- a) receiving a request for location services associated with a mobile station;
- b) identifying a mobile station type of the associated mobile station; and
- c) communicating the request for location services and the mobile station type to a location server.

25. The method of Claim 24, further comprising the steps of:

- a) receiving a unique mobile equipment identifier from the mobile switching center; and
- b) querying a database for the mobile station type with the unique mobile equipment identifier.

26. The method of Claim 24, further comprising the steps of:

- a) receiving a mobile station user identifier from the mobile switching center; and
- b) querying a database for the mobile station type corresponding to and associated with the mobile station user identifier.

27. The method of Claim 26, wherein the mobile station user identifier may include an international mobile subscriber identity or an electronic serial number

28. The method of Claim 24, further comprising the steps of:

- a) receiving an international mobile equipment identifier from the mobile switching center; and
- b) querying an equipment identification server for a manufacturer identifier and model identifier based on the received international mobile equipment identifier.

29. The method of Claim 24, wherein receiving a request for location services associated with a requesting mobile station includes receiving a unique mobile equipment identifier as part of the request for location services.

30. The method of Claim 29, wherein the unique mobile equipment identifier may be received as an element in the standard location request message.

31. The method of Claim 29, wherein the unique mobile equipment identifier may be transmitted as an element in a proprietary message between the mobile switching center and the location server.

32. A method of operating a location server, comprising:

- a) receiving a request for location services associated with a mobile station;
- b) identifying a mobile station type of the associated mobile station;
- c) determining whether an error related to the request for location services has occurred; and
- d) storing and retrieving data relating to errors based on the identified mobile station type.

33. A method of operating a location server, comprising:

- a) receiving a request for location services associated with a mobile station;
- b) identifying a mobile station type of the associated mobile station; and
- c) storing and retrieving data associated with and corresponding to a performance parameter of the associated mobile station based on the identified mobile station type.

34. The method of Claim 33, further comprising the step of providing location services using location services control signals based at least in part on the performance parameter.

35. The method of Claim 34, wherein the step of providing location services includes using location services control signals based at least in part on performance parameter information relating to one or more of the following: additional information associated with and corresponding to the mobile station type, preferred operating parameters associated with the mobile station type.

36. A method of operating a location server, comprising:

- a) receiving a plurality of requests for location services associated with a plurality of requesting mobile stations;
- b) for at least some of the received requests, identifying a mobile station type of the associated mobile station;
- c) identifying errors related to at least some of the received requests for location services; and
- d) maintaining a database of corrective actions based at least in part on the identified errors and the identified mobile station type.

37. A method of operating a location server, comprising:

- a) receiving a plurality of requests for location services associated with a plurality of requesting mobile stations;
- b) for at least some of the requests for location services, identifying a mobile station type;
- c) for at least some of the requests for location services, determining a performance parameter related to the fulfillment of the request for location services; and
- d) storing and retrieving data associated with and corresponding to the determined performance parameter based on the identified mobile station type.

38. A method of operating a communication system, comprising:

- a) communicating with a plurality of mobile stations;
- b) for at least some of the mobile stations, determining a corresponding mobile station type;
- c) for at least some of the corresponding mobile station types, initiating a request for location services for the corresponding mobile stations; and
- d) storing and retrieving data relating to a location services performance parameter based on at least one of the corresponding mobile station types.

39. The method of Claim 38, further comprising:

- a) receiving requests for location services from a plurality of mobile stations; and
- b) providing the requested location services.

40. The location services apparatus of Claim 1 wherein the location services equipment identity information and the location services equipment identifiers are associated with and correspond to a location server.

41. The location services apparatus of Claim 40 wherein the characteristic includes a manufacturer of the location server.

42. The location services apparatus of Claim 40 wherein the characteristic includes a model of the location server.

43. The location services apparatus of Claim 40 wherein the characteristic includes preferred methods for responding to the location server.

44. The location services apparatus of Claim 40 wherein the characteristic includes a bug associated with the location server.

45. The location services apparatus of Claim 44 wherein the location services control signals compensate for an error associated with the bug.

46. The location services apparatus of Claim 40 wherein the characteristic includes an error code associated with the location server.

47. The location services apparatus of Claim 46 wherein the location services control signals compensate for the error associated with the error code.

48. The location services apparatus of Claim 40 wherein the location services control signals cause the mobile station to store information in the memory.

49. A communication system for providing location services, the system comprising:

- a) a base station system;
- b) a location server coupled with the base station system; and
- c) a mobile station in communication with the base station system, wherein the mobile station is configured to selectively generate location services control signals responsive to a characteristic of the location server.

50. A method of providing location information to a location server by mobile station, the method comprising the steps of:

- a) receiving a request from the location server for location information to be provided by the mobile station;
- b) identifying a characteristic of the location server according to the request; and
- c) selectively generating location services control signals by the mobile station based at least in part on the characteristic of the location server.

51. The method of Claim 50, further comprising the step of obtaining an identifier associated with the location server.

52. The method of Claim 51, wherein the identifier associated with the location server includes a Location Area Identifier or an operator identity.

53. The method of Claim 50, wherein the step of identifying a characteristic includes retrieving data from an equipment identity processor responsive to the identifier associated with the location server.

54. The method of Claim 50 wherein the characteristic includes a manufacturer identifier of the location server.

55. The method of Claim 50 wherein the characteristic includes a model identifier of the location server.

56. The method of Claim 50 wherein the characteristic includes a bug associated with the location server.

57. The method of Claim 56 wherein the location services control signals compensate for an error associated with the bug.

58. The method of Claim 50 wherein the characteristic is an error code associated with the location server.

59. The method of Claim 58 wherein the location services control signals compensate for an error associated with the error code.

60. The method of Claim 50, further comprising the step of storing data based at least in part on the characteristic of the location server.

61. A communication system comprising:

- a) a means for providing location information to a location server by a mobile station; and
- b) a means for controlling the means for providing location information based at least in part on an identified characteristic of the location server.

62. The communication system of Claim 61, further comprising a means for identifying a location server to which location information is to be provided.

63. The communication system of Claim 61, further comprising a means for storing data based at least in part on the identified characteristic of the location server.

64. A method of operating a mobile station, comprising:

- a) receiving a request for location data from a location server;
- b) identifying a location server type of the associated location server; and
- c) storing and retrieving data relating to a performance parameter of the location server based on the identified location server type.

65. The method of Claim 64, further comprising the step of providing location information using location services control signals based at least in part on the performance parameter.

66. The method of Claim 65, wherein the step of providing location information includes using location services control signals based at least in part on one or more of the following: additional information associated with the location server type, preferred operating parameters associated with the location server type.